UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/649,190	08/28/2000	Paul V. Cooper	23438.00023	7535

7590 10/04/2002

David E Rogers
Squire Sanders & Dempsey LLP
Two Renaissance Square
40 North Central Avenue Suite 2700
Phoenix, AZ 85004-4498

EXAMINER
KASTLER, SCOTT R

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 10/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Offic Action Summary	Application N .	Applicant( )	
	09/649,190	COOPER, PAUL V.	
	Examiner	Art Unit	
	Scott Kastler	1742	

-- The MAILING DATE of this communication appears on th cov r sheet with the correspondence address --

Peri d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 August 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *25 and 31-37* is/are allowed.

6)☒ Claim(s) *19-24,26-30,38-44 and 47-52* is/are rejected.

7)☒ Claim(s) *45 and 46* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 August 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 19, 21, 23, 26 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Dube. Dube teaches a device including an impeller (20) with three blades (20a) including portions which may be angled at a 45 degree angle for direction metal downwardly, or a 0 degree angle which would direct molten metal outwardly (see the table in col. 8 or col. 9 lines 18-30 for example) a drive shaft (18) and a drive source (16) showing all aspects of the above claims, since the use of the claimed apparatus (for scrap melting) cannot be relied upon to fairly further limit claims to the apparatus itself. See *In re Casey*, 152 USPQ 235, "means for connecting an impeller to a shaft" is defined in the specification at page 5, lines 23-24 as "any structure capable of connecting impeller 100 to drive shaft 12.", and "means for generating a flow of molten metal" is met by the impeller (20) of Dube. The "open impeller means" which is defined by the originally filed specification as impellers which allow scrap and dross to pass through the impeller (see the specification, page 5 lines 8-11 for example) is also met by Dube, since the impeller (20) of Dube allows for the flow of materials across all of it's faces.

Claims 19, 21, 23 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper'899. Cooper'899 teaches a scrap metal melting device including an impeller (11) connected to a drive shaft (23) connected to a drive source (55) where each of the three impeller

blades include an angled portion for directing molten metal downwardly (13) and a portion which directs molten metal outwardly (33) thereby showing all aspects of the above claims, since "means for connecting an impeller to a shaft" is defined in the specification at page 5, lines 23-24 as "any structure capable of connecting impeller 100 to drive shaft 12.", and "means for generating a flow of molten metal" is met by the impeller of Cooper'899, although the impeller (11) of Cooper'899 does not meet the requirements of an "open impeller".

Claims 19, 21, 23 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper'986. Cooper'986 teaches a scrap metal melting device including an impeller (35) connected to a drive shaft (23) connected to a drive source (61) where each of the three impeller blades include an angled portion for directing molten metal downwardly (49) and a portion which directs molten metal outwardly (57) thereby showing all aspects of the above claims since "means for connecting an impeller to a shaft" is defined in the specification at page 5, lines 23-24 as "any structure capable of connecting impeller 100 to drive shaft 12.", and "means for generating a flow of molten metal" is met by the impeller of Cooper'986, although the impeller (35) of Cooper'986 does not meet the requirements of an "open impeller".

Claims 19 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper'807. Cooper'807 teaches a scrap metal melting device including an impeller (200) connected to a drive shaft (20) which is in turn connected to a drive source, thereby showing all aspects of the above claims since "means for connecting an impeller to a shaft" is defined in the specification at page 5, lines 23-24 as "any structure capable of connecting impeller 100 to drive

shaft 12.", and "means for generating a flow of molten metal" is met by the impeller of Cooper'807, although the impeller (200) of Cooper'807 does not meet the requirements of an "open impeller".

Claims 19, 26, 27 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Gilbert et al'863. Gilbert et al'863 teaches a molten metal impeller device including an impeller (40) connected to a shaft (30) for generating a flow of molten metal, where the impeller (40) includes four blades in the shape of a cross, thereby showing all aspects of the above claims since "means for connecting an impeller to a shaft" is defined in the specification at page 5, lines 23-24 as "any structure capable of connecting impeller 100 to drive shaft 12.", and "means for generating a flow of molten metal" is met by the impeller of Gilbert et al'863, although the impeller (40) of Gilbert'863 does not meet the requirements of an "open impeller".

Claims 19, 21, 23, 26 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper'045. Cooper'045 teaches a scrap metal melting device including an impeller (162 for example) with blades including an angled portion (161) which directs molten metal downwardly, and a portion (160) which directs molten metal outwardly, connected to a drive shaft (200) connected to a drive source (300) showing all aspects of the above claims since "means for connecting an impeller to a shaft" is defined in the specification at page 5, lines 23-24 as "any structure capable of connecting impeller 100 to drive shaft 12.", and "means for generating a flow of molten metal" is met by the impeller of Cooper'045, although the impeller (100) of

Cooper'045 also meets the requirements of an "open impeller" as defined by the originally filed specification as impellers which allow scrap and dross to pass through the impeller (see the specification, page 5 lines 8-11 for example).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 22 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over each of Cooper'899, Cooper'986 or Cooper'045. As applied to claim 19 above, each of Cooper'899, Cooper'986 and Cooper'045 show all aspects of the above claims except to specifically recite that the impeller have four blades, although each of the above references operate in substantially the same manner for substantially the same purpose as instantly claimed. It has been well settled that motivation to increase the numbers of a component shown by the prior art (in this case the number of impeller blades) in order to increase the effect of the component would have been a modification obvious to one of ordinary skill in the art at the time the invention was made. See *In re Harza*, 127 USPQ 378. The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because one of ordinary skill in the

molten metal impeller art would have found it an obvious modification to increase the numbers of impeller blades in any of Cooper'899, Cooper'986 or Cooper'045 to four, or more, in order to increase the amount of surface area which serves to direct the molten metal.

Claims 24, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Cooper'899, Cooper'986 or Cooper'045, as applied to claim 19 above. Each of Cooper'899, Cooper'986 or Cooper'045 show all aspects of the above claims except to specifically teach the instantly recited impeller component sizes. However, it has been well settled that absent any showing that it is critical, motivation to modify the size of an article (the impeller blade components) is a modification that would have been obvious to one of ordinary skill in the art at the time the invention was made. See *In re Rose*, 105 USPQ 237. The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the impeller components of each of Cooper'899, Cooper'986 or Cooper'045 operate in substantially the same manner for substantially the same purpose as that of the instant claims, and motivation to employ impeller components of any particular size, absent any showing that the size of the components is critical, in the impellers of each of Cooper'899, Cooper'986 or Cooper'045 would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over any of Cooper'899, Cooper'986 or Cooper'045 as applied to claim 19 above. Each of Cooper'899, Cooper'986 or Cooper'045, as applied to claim 19 above show all aspects of the above claim except to specifically recite the instantly claimed impeller configurations, although the impellers of each of Cooper'899, Cooper'986 or Cooper'045 operate in substantially the same manner for

the same purpose as instantly claimed. It has been well settled that absent any demonstrated new or unexpected results arising therefrom, motivation to alter the configuration of a component shown by the applied prior art without materially altering the function of said component, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made. See *In re Dailey*, 149 USPQ 47. In the instant case, the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because one of ordinary skill in the molten metal impeller art would have found it an obvious modification to alter the shapes or configurations of the impeller blades of any of Cooper'899, Cooper'986 or Cooper'045 to any desired configuration, including those instantly claimed, as long as the impeller functions in the manner required by Cooper'899, Cooper'986 or Cooper'045.

Claims 47, 48 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Cooper'045 or Dube, as applied to claim 51 above. Each of Cooper'045, or Dube as applied to claim 51 above show all aspects of the above claim except to specifically recite the instantly claimed impeller configurations, although the impellers of each of Cooper'045 and Dube operate in substantially the same manner for the same purpose as instantly claimed. It has been well settled that absent any demonstrated new or unexpected results arising therefrom, motivation to alter the configuration of a component shown by the applied prior art without materially altering the function of said component, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made. See *In re Dailey*, 149 USPQ 47. In the instant case, the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because one of ordinary skill in the molten

metal impeller art would have found it an obvious modification to alter the shapes or configurations of the impeller blades of either of Cooper'045 or Dube to any desired configuration, including those instantly claimed, as long as the impeller functions in the manner required by Cooper'045 or Dube.

Claims 20, 38-44, 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Cooper'045 or Dube in view of Mordue et al'211. As applied to claims 47, 48 and 52 above for example, both of Cooper'045 and Dube teach open impellers in a device for molten metal mixing which shows or fairly suggests all aspects of the above claims, since as stated above, without any proper showing of a material difference in operation arising therefrom, modification of the shape, size or number of impellers would have been modifications obvious to one of ordinary skill in the art at the time the invention was made; except for the provision that the connection of the impeller to the drive shaft be made through the use of a non-threaded tapering section extending through the impeller. Mordue et al'211 teaches that connection of the impeller (13) to a drive shaft (1) of a molten metal mixing device through the use of a non-threaded shaft and impeller section extending through the impeller, in which the section may take the form of a tapered bore (see col. 4 lines 52-61, where Mordue et al'211 allows for the use of any desired configuration of the end (26)) is known in the molten metal mixing art, and that such an arrangement provides for improved connections when compared with conventional connections used in connecting impellers to drive shafts (see col. 1 line 65 to col. 2 line 17 for example). Because improved connection of the impeller to the derive shaft would also be desirable in each of Cooper'045 and Dube, motivation to employ the improved connection system described by Mordue et al'211 in the systems described by either of Dube or Cooper'045

would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

Allowable Subject Matter

Claims 45 and 46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 25 and 31-37 are allowed.

Response to Arguments

Applicant's arguments filed 8-6-2002 have been fully considered but they are not persuasive. Applicant's arguments that Dube does not show the means for connecting an impeller to a shaft, "an impeller means" or and "open impeller" as defined by the instant specification are not persuasive for the reasons given in the rejections above, i.e., "means for connecting an impeller to a shaft" is defined in the specification at page 5, lines 23-24 as "any structure capable of connecting impeller 100 to drive shaft 12.", and "means for generating a flow of molten metal" is met by the impeller (20) of Dube. The "open impeller means" which is defined by the originally filed specification as impellers which allow scrap and dross to pass through the impeller (see the specification, page 5 lines 8-11 for example) is also met by Dube, since the impeller (20) of Dube allows for the flow of materials across all of it's faces.

Applicant's argument that none of Cooper'807, Gilbert, Cooper'986 or Cooper'899 teach the use of an open impeller is not persuasive because the claims rejected by these references do

not require the use of an "open impeller" but rather only an impeller, which as defined by the specification as noted above is met by any means for generating a flow of molten metal (see the originally filed specification, page 1 lines 26-27 for example). Since all of the above references contain blades which extend from the hub (where the impeller is connected to the shaft), they also meet the requirement of having "outwardly extending blades".

Applicants argument that Cooper'045 does not teach the use of a non-threaded bore for connection of the impeller is not persuasive because the claims rejected by Cooper'045 alone, do not require this feature.

Applicant's arguments regarding the rejection of claims over Cooper'045 in view of Russian'312 have been considered and are sufficient to overcome these rejections for the reasons advanced by the applicant in the response filed on 8-6-2002.

Applicant's arguments that the impeller configurations instantly claimed provide improved results over the impeller configurations of the applied prior art are not yet persuasive because applicant's have provided no showing, in proper declarative or affidavit form supporting the assertions of improved results. It has been well settled that argument or conclusory statements in the specification alone, are not sufficient to establish a proper showing of new or unexpected results. See *In re Wood et al,* 199 USPQ 137.

Applicant's arguments with respect to newly presented claims 31-52 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Kastler whose telephone number is (703) 308-2506. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (703) 308-3050. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

Scott Kastler
Primary Examiner
Art Unit 1742

sk
October 3, 2002